

ABSTRACT OF THE DISCLOSURE

A photosensitive printing element is used for preparing flexographic printing plates. The photosensitive printing element comprises (a) a support and especially a flexible support, (b) a photopolymerizable layer comprising an elastomeric composition sensitive to non-infrared actinic radiation, said layer being soluble, swellable or dispersible in a liquid developer prior to exposure to said non-infrared actinic radiation, and (c) at least one layer comprising a radiation-sensitive imaging layer, such as an infrared radiation sensitive thermographic material that provides excellent image density (e.g., greater than 3.0) at least in the electromagnetic region of said non-infrared radiation sensitivity and preferably in both the visible and ultraviolet regions of the electromagnetic spectrum upon exposure to infrared laser radiation and thermal development. Imaging of the imaging layer (e.g., the UV imaging) also changes the permeability of that layer to oxygen permeation, which alters the shape of dots formed in the polymerizable layer. The mask may be on top of the elastomeric composition or underneath the elastomeric composition (where the flexible support is transparent). The element may alternatively have a layer with constant permeability and a density decreasing layer on its exposure side. The decrease in UV absorbency would allow imaging through the layer, before top layer removal, while gaining the benefit of the dot shape altering oxygen permeability.